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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,821	02/23/2004	Hiroki Futatsuya	040065	5438

23850 7590 07/25/2007
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EXAMINER

GULL, RUSSELL L

ART UNIT	PAPER NUMBER
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2123

MAIL DATE	DELIVERY MODE
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07/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/782,821	FUTATSUYA ET AL.	
	Examiner	Art Unit	
	Russ Guill	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 1,6,11,12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 - 12 have been examined. Claims 1 - 12 have been rejected.

Response to Remarks

2. Regarding claims 1 - 5 rejected under 35 USC § 101:

- a. Applicant's arguments have been fully considered, but are not persuasive, as follows.

- b. Regarding Claims 1 - 5, the Examiner alleges that the recited method appears to contain abstract ideas such as calculating an average value of light. Therefore, to be statutory, the claim must be directed to a practical application producing a concrete, useful and tangible result needed to support a practical application.

- c. It is respectfully submitted that the simulation method, equipment, etc. of the present invention is used for estimating the amount of occurrence of local flare, which is then used for optical proximity correction, to correct the dimensions of the reticle and thereby obtain a more accurate optical image on a semiconductor device, as taught at page 1, line 25 to page 3, line 3 of the present specification. Therefore, it is respectfully submitted that such method, equipment, etc., of the present invention does produce a concrete, useful and tangible result.

- i. The Examiner respectfully replies:

- ii. In response to applicant's arguments, the recitation that the local flare "is then used for optical proximity correction, to correct the dimensions of the reticle and thereby obtain a more accurate optical image on a semiconductor device" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and

where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

iii. Further, the result of "estimating the amount of occurrence of local flare" does not appear to necessarily produce a tangible result. The act of "estimating" appears to mean, "calculating approximately", and calculation alone does not appear to be tangible.

3. Regarding claims 1 - 12 rejected under 35 USC § 103:

- a. Applicant's arguments have been fully considered, and are not persuasive. Accordingly, the rejections are withdrawn.

Claim Objections

- 4. Claim 1 is objected to for the following minor informalities: the recites in line 9, three dots which appear to be points of ellipsis. A comma appears more appropriate.
- 5. Claims 6, 11 and 12 are objected to for the following minor informalities: As in the objection to claim 1 above, the claims recite three dots which appear to be points of ellipsis. A comma appears more appropriate.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1 - 12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

a. Regarding claims 1 - 5, the recited method appears to contain abstract ideas such as calculating an average value of light. Therefore, to be statutory, the claim must be directed to a practical application producing a concrete, useful and tangible result. The claim does not appear to produce a tangible result needed to support a practical application.

b. Regarding claims 6 - 10, the recited equipment appears to perform abstract operations, such as calculating average light intensity. Therefore, to be statutory, the claim must be directed to a practical application producing a concrete, useful and tangible result. The claims do not appear to produce a tangible result needed to support a practical application.

c. Regarding claim 11, the recited computer program appears to perform abstract operations such as calculating an average value of light. Therefore, to be statutory, the claim must be directed to a practical application producing a concrete, useful and tangible result. The claim does not appear to produce a tangible result needed to support a practical application.

d. Regarding claim 11, the claim is directed to a computer readable storage medium on which a computer program is stored. Under a broad reasonable interpretation, the computer program may be interpreted as source code, which is non-functional material *per se*, and therefore is non-statutory.

e. Regarding claim 11, the claim is directed to a computer readable storage medium on which a computer program is stored. The specification appears to allow the interpretation of a computer readable storage medium as including various transmission media such as a wire circuit, an optical fiber, a wireless circuit, a LAN or the Internet. These elements do not allow the computer program to act as a computer component and allow the functionality of the computer program to be realized, and therefore, no usefulness of the computer program can be realized. Therefore, the claims are non-statutory.

f. Regarding claim 12, the recited computer program product appears to perform abstract operations such as calculating an average value of light. Therefore, to be statutory, the claim must be directed to a practical application producing a concrete, useful and tangible result. The claim does not appear to produce a tangible result needed to support a practical application.

g. Regarding claim 12, the claim is directed to a computer product. Under a broad reasonable interpretation, the computer product may be interpreted as source code, which is non-functional material *per se*, and therefore is non-statutory.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

a. Claims 1 - 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- i. Regarding claim 1, the claim recites, $\bar{I} = \sum_{k=1}^N F_k S_k S_k^*$ but N appears to be undefined. The metes and bounds of the claim cannot be reliably determined. Correction or amendment is required.
- b. Regarding claim 6, the claim recites, $\bar{I} = \sum_{k=1}^N F_k S_k S_k^*$ but N appears to be undefined. The metes and bounds of the claim cannot be reliably determined. Correction or amendment is required.
- c. Regarding claim 11, the claim recites, $\bar{I} = \sum_{k=1}^N F_k S_k S_k^*$ but N appears to be undefined. The metes and bounds of the claim cannot be reliably determined. Correction or amendment is required.
- d. Regarding claim 12, the claim recites, $\bar{I} = \sum_{k=1}^N F_k S_k S_k^*$ but N appears to be undefined. The metes and bounds of the claim cannot be reliably determined. Correction or amendment is required.

Allowable Subject Matter

9. Regarding claims 1 - 12, any indication of allowability is withheld pending the resolution of the outstanding rejections.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

11. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

12. The prior art made of record but not relied upon is considered pertinent to the applicant's disclosure:

- a. Max Born and Emil Wolf; "Principles of Optics", 1970, fourth edition, pages 526 - 532; teaches calculation of intensity from partially coherent quasi-monochromatic illumination.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russ Guill whose telephone number is 571-272-7955. The examiner can normally be reached on Monday - Friday 9:30 AM - 6:00 PM.

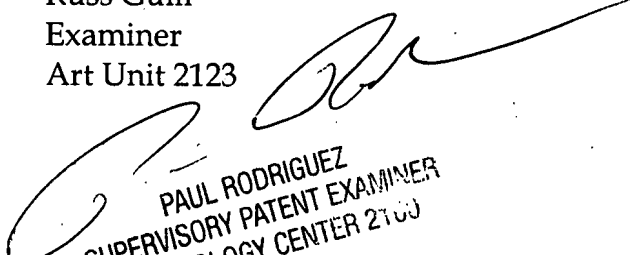
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist: 571-272-2100.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RG

Russ Guill
Examiner
Art Unit 2123



PAUL RODRIGUEZ
SUPERVISORY PATENT EXAMINER
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